Capital Projects

Capital Improvement Program Management
Fiscal Year 2002 Project Proposal

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Background:

The purpose of the San Juan Capital Improvements Program is to implement capital project which have been identified by the Program as necessary for the recovery of the endangered fish. As defined in Public Law 106-392 capital projects include "...planning, design, permitting or other compliance, pre-construction activities, construction, construction management, and replacement of facilities, and the acquisition of interests in land or water, as necessary to carry out the Recovery Implementation Programs".

Study Area:

San Juan River Basin

Objectives:

1. Coordinate the preparation of Federal budget requests.

2. Develop and manage cooperative agreement with the National Fish and Wildlife Foundation which provides the mechanism to utilize non-Federal cost share funds to implement capital projects.

3. Develop and manage contracts and agreements to accomplish construction and acquisition of capital projects.

4. Account for and provide capital project expenditure reports to the Coordination Committee.

5. Coordinate planning, design, permitting, pre-construction, construction and acquisition of capital projects.

Products:

Financial reports will be periodically provided to the Coordination Committee documenting the status of Federal appropriations and non-Federal cost sharing contributions. The current list of approved capital projects include: Razor Back Sucker Augmentation, Augmentation of Colorado Pikeminnow, Pikeminnow Fingerling Production, NIIP Grow Out Ponds, Hogback and Cudei Fish Passage (up to $2,000,000) and PNM Fish Passage. Reports will be periodically provided to the Coordination Committee on the status of these facilities and activities.

Budget FY-2002:

Objective 1

Personnel - 10 staff days @ $500 per day		$ 5,000
Travel		$ 0
Equipment and Supplies		$ 0
	Subtotal	$ 5,000

Objective 2

Personnel - 15 staff days @ $500 per day		$ 7,500
Travel - 2 trips to Denver at $500 per trip		$ 1,000
Equipment and Supplies		$ 0
	Subtotal	$ 8,500

Objective 3

Personnel - 30 staff days @ $500 per day		$15,000
Travel - 5 trips @ $500 per trip		$ 2,500
Equipment and Supplies - communication and computer assessment		$ 2,000
	Subtotal	$19,500

Objective 4

Personnel - 10 staff days @ $500 per day		$ 5,000
Travel		$ 0
Equipment and Supplies		$ 0
	Subtotal	$ 5,000

Objective 5

Personnel - 90 staff days @ $500 per day		$45,000
Travel - 10 trips @ $500 per trip		$ 5,000
Equipment and Supplies - communication and computer assessment		$ 2,000
	Subtotal	$52,000

Summary

Personnel - 155 staff days @ $500 per day		$77,500
Travel - 17 trips @ $500 per trip		$ 8,500
Equipment and Supplies - communication and computer assessment		$ 4,000
	Grand Total	**$90,000**

Operation of Public Service Company of New Mexico
Fish Passage Structure
Fiscal Year 2002 Project Proposal

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Study Area:

Public Service Company of New Mexico Diversion Dam is located at RM 166.6

Collections:

The fish trap at the upstream end of the fish passage provides the ability to capture all fish that use the passageway. Specimens collected will be inspected to determine if any rare fishes (Colorado pikeminnow, roundtail chub, and razorback sucker) are present in the trap. All identifiable rare fish and all large- bodied native fish (i.e., flannelmouth and bluehead suckers) will be released. All other specimens will be removed from the river.

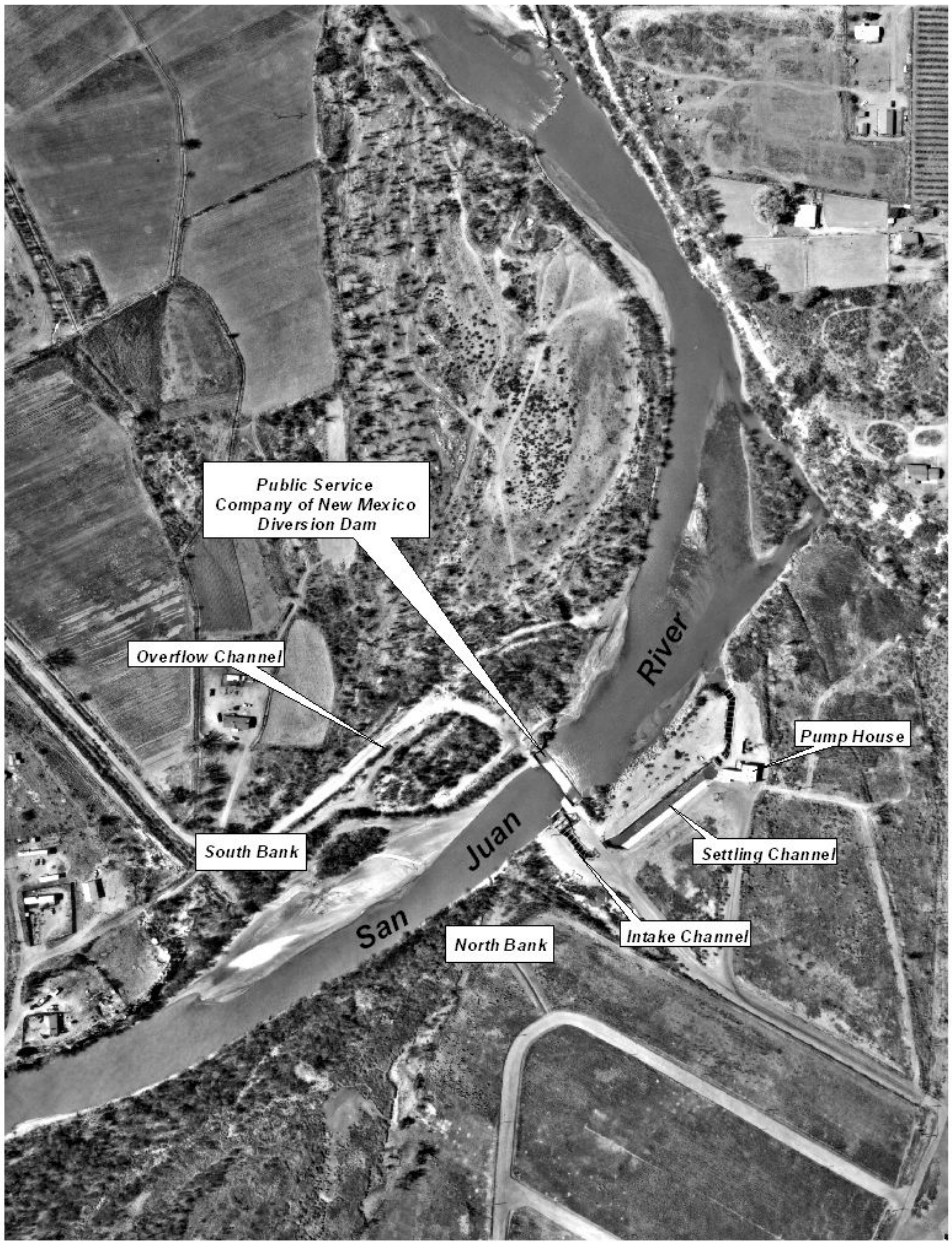
Background:

The PNM Diversion Dam (see Figure 1) was constructed in 1971. The 3.25-foot high diversion dam (weir) is located on the San Juan River about 12 miles downstream of Farmington, New Mexico near the town of Fruitland at River Mile 166.6. Facilities at the diversion include a concrete weir, a series of screened intake structures, an intake channel, a settling channel, and a pump house.

Water flows over the dam into a stilling basin created by a concrete apron. The stilling basin is the width of the river. The presence of the dam and the basin creates a barrier to fish moving upstream. As flows increase, the difference in the upstream and downstream water levels is reduced. Although water levels are reduced, water velocities increase and the weir provides an impediment to upstream fish movement. Recovery studies conducted as part of the SJRRIP have shown that some fish are able to move upstream past the weir but their specific method of movement is not known and the number of fish discouraged from upstream movement by the presence of the weir is also unknown. One possible method of upstream movement could occur during high river flows. When the flow in the San Juan River is above 7,000 cfs, some of the flow goes around the dam making it possible for fish to go around the dam at these higher flows.

A 4-foot by 6-foot sluiceway in the weir located on the north side of the river, is used to sluice the inlet structure of sediment. Normal sluice gate operations have the sluice gate open between 8 and 12 inches. Trash racks and isolation gates are located at the point of diversion. A concrete settling channel about 490 feet long conveys river water to the pump house or returns it to the river. Diverted water moves through traveling screens to three pumps, together they are capable of pumping a maximum of 17,000 gallons per minute (37 cfs) to a 110-acre storage reservoir (Figure 2). From the storage reservoir, the water is pumped to San Juan Generating Station (SJGS).

The facility provides an average of approximately 1 million gallons of water per hour (24,200 acre-feet per year) to PNM for cooling operations for the SJGS (Tetra-Tech 2000).



A need has been identified by the San Juan River Basin Recovery Implementation Program (SJRRIP) to restore endangered fish passage upstream past the PNM Diversion Dam. The purpose of establishing fish passage would be to protect and recover native Colorado pikeminnow (*Ptychocheilus lucius)* and razorback sucker (*Xyrauchen texanus*) populations in the San Juan Basin while water development proceeds in compliance with all applicable Federal and State laws, including fulfillment of Federal trust responsibilities to the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, Jicarilla Apache Nation and the Navajo Nation. In addition, other native fish species would benefit from restored passage.

The fish passageway will extend the range of these two native fishes upstream about 50 miles into historical habitat and may allow Colorado pikeminnow to naturally re-colonize these upstream reaches.

A fish trapping facility located at the upper end or forebay of the fishway allows researchers to sort, examine, and count fish and remove nonnative fish from the system.

Objectives:

1.) Determine the use of the fish passageway by juvenile and adult native and nonnative fishes.

2.) Identify any Colorado pikeminnow congregations that may be related to the spawning period in the San Juan River.

3.) Maintain the facility in a manner that assures long-term benefit.

Products:

1.) Definitive data on passage--number of species; numbers per species; seasonal use and distribution by species.

2.) Well maintained and operable fish passage facility.

Methods:

Working with the Program, Reclamation will contract with the Navajo Nation to perform the long-term operation and maintenance of the passageway. Work performed by the Nation is grouped in 2 general areas, operation and maintenance.

Fish and Wildlife Service personnel will provide necessary fish passageway training. Training will be provided in Grand Junction, Colorado at the Redlands Fish Passage on the Gunnison River. The training will assure the follow proficiencies:

- Proper fish handling skills.
- Species identification
- PIT Tagging skills

Operation:

1.) Operate the fish trap and passage way from April 1 through October 31 each year.

2.) Passage is visited once a day to check trap, sort fish, and remove trash as needed. Steps are as follows:
   - Lower water in trap
   - Collect fish in nets and remove from trap
   - Sort fish by native and non-native species (dispose of non-native with exception of trout species) (Potentially provide channel catfish to non-profit organization like school, senior center, etc.).
   - Enumerate and record all fish 4" in length or longer.
   - Check Colorado pikeminnow and razorback sucker for presence of a PIT tag.

- If tag is present record number, tag fish if no tag is found.
- Weigh and measure each Colorado pikeminnow and razorback sucker (use total length in mm, weight in grams).
- Return all native and trout species to the river via the fish return pipe.
- Raise water in trap.

3.) Crews checking the fish trap are also responsible for periodic cleaning of riverborne sediment in the fish trap that usually builds up during runoff.

4.) Daily cleaning of surface and submerged trash, debris, and riverborne algae from the trash racks and bar screens in the forebay of the fish passageway, and aluminum conduit screens in the fish trap. The amount of algae, debris, trash, and sediment that accumulates daily at this site is seasonally variable, depending upon flow magnitude and water volume during the water year.

5.) Analyze and evaluate data and prepare annual progress report.

6.) Prepare draft and final report.

Maintenance:

1.) Maintain the fish passage facility as necessary. Maintenance will include inspection of facilities for items that need to be repaired. Painting as necessary to control corrosion. Lubrication of moving equipment. Checking fluid levels in gear boxes and cooling radiators, if any.

2.) During the first 2 years of operation representatives from the Navajo Nation, Reclamation, and FWS will inspect the facility to identify any design deficiencies and maintenance requirements.

3.) After the first 2 years of operation, representatives from the Navajo Nation, Reclamation and the FWS will perform an inspection every 3 years.

4.) In the event of a significant flood event, representatives from the Navajo Nation will notify Reclamation, BIA and the FWS and all parties will inspect the facility for damage.

Deliverables/Schedule:

1.) Fish number will be recorded daily and a monthly fish passage report shall be submitted to the U.S. Fish and Wildlife Service by the 15th of each following month including time and date each time the trap was checked, number of species, and lengths, weights and PIT Tag numbers of each endangered fish.

2.) Analyze and evaluate data and prepare annual progress report.

3.) Prepare draft and final report.

Budget FY-2002:

Training		
Travel		$ 1,000
Labor		2,000
First Year Start-Up Supplies		
Dip nets	$	50
Rubber boots	$	75
PIT Tags	$	500
PIT Tag wand reader	$	2,000
Fish measuring board	$	75
Weighing scale	$	125
High pressure pump for cleaning trap	$	750
Crowding Screen	$	500
Misc hand tools	$	325
Fish Passage Operation		
Labor	$	20,000
Supplies	$	4,000
Fish Passage Maintenance		
Labor	$	2,000
Equipment	$	1,600
Supplies	$	500
Facility Inspection		
FWS - personnel costs	$	800
FWS - travel costs	$	150
Reclamation - personnel costs (inspection and	$	2,400
Reclamation - travel	$	150
Report Preparation		
Labor	$	3,000
Grand Total	$	42,000

References:

Burdick, B. D. 2001. Upper Colorado River Recovery Implementation Program 2001 Scope of Work for Evaluation of Redlands Fish Passage structure